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is very interesting and instructive. Attention should, however, be called to the fact that the correct name is not *Foehm* (*Föhm*), as it there appears, but *Foehn* (*Föhn*), or *Foen* (*Fön*), the form with *h* being preferred. *Foehn* is derived probably from the Italian *favonio*, which in turn is from the Latin *favonius*, the name of a gentle west wind. Hence the Italian west wind becomes a Swiss south wind. In Latin and Italian the word is masculine; in German it is usually treated as masculine, but Grimm quotes an interesting passage from an old gloss in which it is used as feminine. The character of this wind is as uncertain as the gender, the etymological meaning being 'the favoring one,' but the following extracts translated from Schiller's *William Tell* show how the Swiss on Lake Lucerne dread the *Foehn*, 'the mighty spirit,' as it has been called. Ruodi, the fisherman, exclaims: "The *Foehn* has broken loose; you see how wild the lake is. I cannot steer against storm and waves." Baumgarten answers: "God help you! How I pity you!" In another place Tell says: "When the *Foehn* sweeps down from its ravines, the people put out their fires, and the boats hastily seek the harbor." Extinguishing the fires is still a custom, even a law in some parts of Switzerland—in Uri, for instance, which is especially exposed to the violence of the *Foehn*.

CHARLES BUNDY WILSON.

THE UNIVERSITY OF IOWA,  
DEPARTMENT OF GERMAN.

#### THE OPENING OF THE MOUTH AS EXPRESSION.

TO THE EDITOR OF SCIENCE: Charles Darwin ascribed the open mouth in surprise and astonishment to several causes, viz., for quietness and effectiveness of breathing, and by mere relaxation of muscles. It occurs to me that a deeper organic reason may have its force, namely, that the open mouth is attention sign, and is a primitive and constant reaction with the young of many animals for the reception of food—for example, with birds. Any sound or other stimulus immediately causes the young bird to extend its mouth. I have some evidence that with very young infants every stimulus of sound or sight causes opening of the mouth, often in sucking form, and the smile of the in-

fant when the finger is pointed at it may be either nascent or degraded sucking. The common and highly useful tendency of the very young to open the mouth to all stimuli, visual, aural, etc., continues as a survival in after life, being especially brought out with stimuli of high intensity and unusual quality, and thus becomes a mark of surprise and astonishment. It is also noteworthy that with many young boys and girls there is a tendency to open the mouth under any attention. The rise of smiling and laughter as connected with wit and humor—at the basis of which lies surprise—is thus evident as a kind of attention expression. Certainly the primary expression of the mouth is a feeding expression, and that this has been modified and evolved in connection with a variety of attention phenomena seems probable, and it would be worth while to make a very detailed study of expression in infants and young animals with this point in view.

HIRAM M. STANLEY.

LAKE FOREST, ILL., August 8, 1899.

#### ASTRONOMICAL NOTES.

OBSERVATORY OF YALE UNIVERSITY.

THE annual report of this observatory states that the heliometer has been used for making the final measures of the parallax series of stars having large proper motion. The study of the refraction of highly colored red stars has been continued. The photographic observations of the meteors in November, 1898, gave sixteen trails, eight of which were of Leonids. Four of these were in plates at both of the stations occupied. Dr. Elkin has published in the *Astrophysical Journal* a careful discussion of the position of the radiant obtained from the trails.

FLOWER OBSERVATORY OF THE UNIVERSITY OF PENNSYLVANIA.

VOL. I., Part II., of the publications of this observatory contains the discussion of the zenith telescope observations—October 1, 1896–August 16, 1898. The plan of this work for investigating the variation of latitude is that proposed by Küstner in 1890 and has been most zealously and carefully carried out by Professor Doolittle. The groups of stars, each of which is included in about two hours of right ascen-

sion, are so arranged that one group culminates in the evening and another in the morning hours. The range of the variation in latitude, given in the final corrected results, is  $0''.44$ , and the probable error of a single determination is  $0''.134$ . Two maxima and minima are covered in the period of observations, the range of the maximum and minimum in the middle of the series being somewhat less than the extreme range. Among the interesting details brought out in the critical discussion are: that the value of the micrometer screw is variable from other causes than change of temperature; that the deduced constant of aberration is unexpectedly large, viz.,  $20''.580$ , and that the same pairs of stars gave results on different nights which differed occasionally by many times the computed probable error of the observation. No satisfactory explanation of this anomaly has been found. The corresponding anomaly in longitude work is plausibly explained by variation in personal equation of the observers, but it is not easy to apply this explanation to zenith telescope observations.

CHAMBERLIN OBSERVATORY OF THE UNIVERSITY OF DENVER.

PROFESSOR HOWE continues to make micrometric observations of superior excellence with the Bruce micrometer attached to the 20-inch equatorial. His careful work upon the fainter nebulae has been embodied in two communications to the Royal Astronomical Society which are published in *Monthly Notices*, Vol. LVIII., Nos. 6 and 9. The extensive series of observations of Eros from September 12, 1898, to April 6, 1899, is given in the *Astronomical Journal*, No. 463.

ASTRONOMICAL OBJECTIVES.

ZEISS's new catalogue calls attention to the improvements in objectives which have resulted from recent studies encouraged by the varieties of glass manufactured at Jena. The price lists include six or more special combinations having individual excellences. The binary apochromatic lens with ratio of aperture to focal length 1:17 to 1:20 nearly eliminates the secondary spectrum, as does König's combination of one flint and two crown of shorter focus (ratio 1:10 to 1:15) which is styled the triple apochromatic

lens. The ordinary silicate glasses are used as heretofore with long focus (ratio 1:15 to 1:18) by Fraunhofer's formula, and there is also a lens of longer focus especially adapted for astrophotographic purposes. Short-focus lenses are represented by a triple lens with ratio 1:4 to 1:6 designed for finders and a binary lens with flat field, both of which have an uncorrected secondary spectrum. It would be interesting to learn how many of these special combinations will come into actual use.

WINSLOW UPTON.

PROVIDENCE, R. I.,  
August 10, 1899.

NOTES ON PHYSICS.

THE London *Electrician* states that on July 3d Lord Kelvin sent to the Royal Society the following in a telegram: "An electrified body is set into rotation by the generation of a magnetic field around it. The magneto-optical phenomena discovered by Faraday, Kerr and Zeeman are to be thus explained." In the next issue of the paper a letter from Lord Kelvin states that this announcement was not based on experimental results, but deduced from the current that flows in a metallic conductor at right angles to a growing magnetic field. The telegram is discussed editorially and in a letter by G. F. Fitzgerald. The point seems to be that the growth of the field will cause a displacement of the charge round the body which will be the equivalent of a momentary current, and that this reacting on the field will cause rotation, which, if the body is frictionless, will continue till the stopping of the field produces an equal opposite torque. Fitzgerald states that he has considered this matter, but doubts if the forces will be great enough to permit of experimental demonstration. In the same issue, and in connection with this matter, S. P. Thomson describes and discusses a phenomenon presented to the Royal Society by C. E. S. Phillips, in which a vacuum tube having iron electrodes which can be powerfully energized by an external electromagnet is used. When a discharge has been sent through the tube, and then cut off, even for so long as ten minutes, and then the magnets are energized, a brightly luminous ring forms normal to the field, and